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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/658,778	09/11/2000	Ghassan Semaan	10.0524	4433
22474	7590	12/13/2005	EXAMINER	
DOUGHERTY CLEMENTS 1901 ROXBOROUGH ROAD SUITE 300 CHARLOTTE, NC 28211			ELALLAM, AHMED	
			ART UNIT	PAPER NUMBER
			2668	

DATE MAILED: 12/13/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	Application No. 09/658,778	Applicant(s) SEMAAN, GHASSAN	
	Examiner AHMED ELALLAM	Art Unit 2668	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 14 November 2005.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-21 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-21 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

*H.N. Nguyen*      **HANH NGUYEN**  
PRIMARY EXAMINER

### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)  | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

## DETAILED ACTION

This communication is responsive to RCE filed on 11/14/2005.

Claims 1-21 are pending.

### ***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371(c) of this title before the invention thereof by the applicant for patent.

The changes made to 35 U.S.C. 102(e) by the American Inventors Protection Act of 1999 (AIPA) and the Intellectual Property and High Technology Technical Amendments Act of 2002 do not apply when the reference is a U.S. patent resulting directly or indirectly from an international application filed before November 29, 2000. Therefore, the prior art date of the reference is determined under 35 U.S.C. 102(e) prior to the amendment by the AIPA (pre-AIPA 35 U.S.C. 102(e)).

1. Claims 1-14, 18, and 19-21 are rejected under 35 U.S.C. 102(e) as being anticipated by Chen et al, US (6,501,758).

Regarding claim 1, Chen discloses a fiber ring (SONET ring) system in which a STS level signals, or combinations of STS level signals are used, the system facilitates effective and efficient communication of ATM and TDM traffic over the common fiber ring. The system, through a variety of configurations and modes of operation, provides flexibility in the distribution of bandwidth between ATM and TDM traffic. Column 4, lines 43-62, Column 6, lines 66-67 and column 7, lines 1-14. (Corresponding to claimed subdividing a portion of data frames comprising a SONET layer into two or more logical channels, each logical channel having associated therewith a predetermined bandwidth capacity). Chen further discloses that virtual path automatic protection switching (VP APS) is used for STS/ATM traffic, and uni-directional path-switched ring protection is offered to STS/TDM traffic. And adjustment of the bandwidth allotted to either traffic type is accomplished provisioning the STS paths accordingly. See column 8, lines 24-39. (Corresponding to assigning a protection mechanism to each logical channel). Chen further discloses an automatic protection switching selector within a node in the fiber ring that chooses incoming signals from either working or protection channels depending on the configuration of the circuit and whether a fault has been detected. In a particular mode of operation, where ring 12 is configured as a bi-directional line-switched ring, automatic protection switching selector identify predetermined ATM -carrying channels and disables line switching protection for these pre-designated ATM -carrying channels. Column 12, lines 8-21. (Corresponding to monitoring the SONET ring

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transmission to determine protection mechanisms associated with each logical channel).

Chen discloses having ATM and TDM traffic mapped to an OC-12 frame, the OC-12 frame having 12 STS-1 payloads. See column 4, lines 40-43), (an OC-12 frame has 12 STS-1 signals, see column 3, lines 14-16). (Claimed each SONET data frame includes a plurality of logical channels). Chen further discloses having flexibility in allocation of bandwidth between TDM and ATM traffic and adjustment of the bandwidth allotted to either traffic type is accomplished by merely provisioning the STS paths accordingly, see column 8, lines 44-48. (Claimed protection mechanism is balanced against bandwidth utilization requirements of grouped data frames that are grouped upon protection desired).

Regarding claim 2, Chen discloses STS level signals, or combinations of STS level signals are used, See column 4, lines 43-62, column 6, lines 66-67 and column 7, lines 1-14. (Corresponding to SONET data frames comprise a plurality of STS level one frame).

Grouping of STS-1 frames is part of the SONET standard. Thus Chen inherently has possession of the claimed grouping of STS-1 frames according to the desired protection or bandwidth desired, since Chen teaches flexibility in allocation of bandwidth between TDM and ATM traffic and adjustment of the bandwidth allotted to either traffic type by provisioning the STS paths, see column 8, lines 44-48.

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Regarding claim 3, Chen discloses that virtual path automatic protection switching (VP APS) is used for STS/ATM traffic, and uni-directional path-switched ring protection is offered to STS/TDM traffic. See column 8, lines 24-39. (Corresponding to the protection mechanism comprise one of a layer1 SONET protection mechanism and a layer 2 protection mechanism).

Regarding claim 4, with reference to Figure 1, Chen discloses that System 10 facilitates effective and efficient communication of ATM and TDM traffic over a common fiber ring. Through a variety of configurations and modes of operation, system 10 provides flexibility in the distribution of bandwidth between ATM and TDM traffic. For example, if one type of traffic dominates the ring, system 10 can be configured to focus the majority of its resources on communicating that type of traffic. In addition, by providing ATM layer processing functionality at least some of nodes 14 on fiber ring 12, system 10 facilitates a high granularity in switching ATM information carried in STM signals. Column 2, lines 37-58. (Corresponding to limitation of claim 4).

Regarding claims 5 and 6, Chen discloses that Fiber ring 12 may comprise, for example, a two-fiber ring configured in a uni-directional path-switched ring (UPSR ) mode, or a bi-directional path-switched ring (BLSR ) mode.

Regarding claim 7, with reference to Figure 1, Chen discloses that System 10 facilitates effective and efficient communication of ATM and TDM traffic over a common fiber ring. Through a variety of configurations and modes of operation, system 10 provides flexibility in the distribution of bandwidth between

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ATM and TDM traffic. For example, if one type of traffic dominates the ring, system 10 can be configured to focus the majority of its resources on communicating that type of traffic. In addition, by providing ATM layer processing functionality at least some of nodes 14 on fiber ring 12, system 10 facilitates a high granularity in switching ATM information carried in STM signals. Column 2, lines 37-58. (Corresponding to Layer2 protection mechanism comprises at least one of: an Ethernet protection mechanism, an Asynchronous transport mode protection mechanism, or a time division multiplexing protection mechanism).

Regarding claims 8-14, claims 8-14 are apparatus claims and have substantially the same scope of respective method claims 1-7, thus they are subject to the same rejection.

Regarding claims 19 and 21, Chen discloses transmitting hybrid traffic ATM/TDM over a common fiber ring. See abstract, column 1, and lines 32-62. (claimed one or more logical channels of the SONET layer are transmitted over a common fiber channel).

Regarding claim 18, Chen with reference to figure 2, shows a switching element 119 (SW/MCR) for switching STM and ATM traffic. (claimed routing data to appropriate hardware switch depending upon traffic type).

### ***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

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(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claim 15 is rejected under 35 U.S.C. 103(a) as being unpatentable over Chen in view of Bisson et al, US (6,349,092).

Regarding claim 15, Chen discloses that VT (Virtual tributary) traffic is carried within the transport Signals (data frame). see column 3, lines 1-24, but it does not explicitly disclose that the VT is VT-1.5.

However, Bisson discloses that SONET defines synchronous signals known as virtual tributaries (VTs) to transport lower speed signals and that VTs operate at four levels below STS-1. The four defined sizes of VTs are VT-1.5 (1.728 Mbps) for DS1 signals, VT-2 (2.304 Mbps) for CEPT-1 signals, VT-3 (3.456 Mbps) for DS1C signals, and VT-6 (6.912 Mbps) for DS2 signals. Within an STS-1 frame, each VT occupies a portion of the frame. Within the STS-1, different VT groups can be mixed together to form one STS-1 payload. See column 5, lines 3-11.

Therefore, it would have been obvious to an ordinary person of skill in the art, at the time the invention was made to have the VT frames of Chen comprise VT 1.5 level frames so that lower speed signal can be provided.

3. Claim 16 and 17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Chen.

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Regarding claims 16 and 17, Chen discloses STS level signals, or combinations of STS level signals are used, See column 4, lines 43-62, column 6, lines 66-67 and column 7, lines 1-14.

Chen does not explicitly disclose that the STS-1 frame are non-contiguous. However, it would have been obvious to an ordinary person of skill in the art, at the time the invention was made to have the STS-1 frames of Chen being non-contiguous or contiguous as required by the type of data, such as time-sensitive (i.e. TDM data) or non time-sensitive data (i.e. ATM data).

### ***Response to Argument***

4. The objections to the specification and the drawings are withdrawn in view of the amendment.

#### **35 USC § 112 rejections:**

##### **Claims 18 and 20:**

Applicant's Amendment to claims 18 and 20 overcomes the 112 1<sup>st</sup> paragraph rejections.

##### **102 rejections:**

##### **Claims 1 and 8:**

Examiner maintains all traversal arguments presented in the last office action mailed on 8/15/2005.

#### **Response to Arguments filed on 10/13/2005:**

Applicant on page 17, arguing that claim 1 as Amended recites "*assigning a protection mechanism to each logical channel, where the protection*

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*mechanism is balanced against utilization requirements of grouped data frames that are grouped depending upon protection desired” (Emphasis added).*

Applicant argues that Chen does not teach grouping data frames, nor the grouping according to the protection desired. Examiner respectfully disagrees.

Chen recites:

*This embodiment provides TDM information the same protection scheme offered in a strictly uni-directional path-switched ring configuration, while facilitating add/drop multiplexing of ATM cells transmitted over the same fiber ring. In addition, this configuration provides exceptional flexibility in allocation of bandwidth between TDM and ATM traffic. Adjustment of the bandwidth allotted to either traffic type is accomplished by merely provisioning the STS paths accordingly. Column 8, lines 40-48.*

*This configuration provides significant flexibility in communicating both TDM and ATM traffic on a common fiber ring. Bandwidth can be easily allocated among the signal types merely by selecting an appropriate number of channels devoted to each type. In addition, this configuration conserves ring bandwidth when transmitting ATM traffic. Rather than leaving protection channels idle while working channels transmit information, system 400 uses both working and protection channels to transmit live ATM traffic. System 400 accomplishes this increase in efficiency by utilizing built-in protection switching of the ATM layer, rather than relying on a dedicated physical path on the ring to provide protection. Column 9, lines 63-67 and column 10, lines 1-8.*

From the above the underlined passages of Chen, and in addition to the transport signals that can be STS-1 or other format such as STS-12, STS3c, OC-n as indicated by Chen, column 10, lines 43-46, it is clear that the added limitation to claim 1 is met (and subsequently that of claim 8).

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**Claim 2:**

Claim 2 has been amended, and subjected to a new ground of rejection.

**Claims 3-7:**

Applicant argued that claims 3-7 depended from claim 2, therefore they are patentable. Examiner disagrees for the reason stated above in the rejection of claims 2-7.

Applicant summarized that claims 1-14, 19, and 21 are not anticipated by Chen et al. Examiner disagrees for the reason stated above with reference to claim 1.

**Claim 15:**

Applicant argues that claim 15 reads on frames, not tributaries, and claim 15 depend from claim 8, which Applicant alleged that is not addressed by the Examiner. Firstly, claim 15 reads on tributaries, claim 15 recites "data frames comprise a plurality of VT-1.5 level frames", contrary to Applicant's assertion, these V-1.5 stands for virtual tributary level 1.5, and as indicated by Bisson, "within an STS-1 frame, each VT occupies a portion of the frame. Within the STS-1, different VT groups can be mixed together to form one STS-1 payload. See column 5, lines 3-11". Thus the limitation of claim 15 is met.

Secondly, Examiner, believes that all the limitation in apparatus claim 8 have the same scope of corresponding claim 1, and therefore is subject to the same rejection. More specifically, claim 8 specify a first second and third circuit for providing the functional limitations recite in the method of claim 1. Claim 8 does

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not recite any specific structural elements other than "circuit". It is clear that figures 1, 2a, 2b, 2d, and 3 have circuits that can be mapped to the first, second and third circuit of claim 8.

**Claims 16 and 17:**

Applicant argues that claims 16 and 17 are allowable since they depend from respective claims 2 and 9 (9 which depend from 8). Examiner respectfully disagrees, contrary to Applicant assertion these claims are rejected, see rejection above.

**Claims 18 and 20:**

Claims 18 and 20 were amended; the Amendment to these claims required a new ground of rejection.

**Note:**

Examiner would like to request a clarification about certain limitations that are believed to be ambiguous, such as the assignment of the protection mechanism to logical channels within the context of the SONET ring, and why monitoring the SONET ring to determine protection mechanisms associated with logical channels if the protection is already assigned.

Applicant is kindly encouraged to contact the Examiner to clarify these issues, such clarification is probably necessary to distinguish over at least in part the prior art of records.

***Conclusion***

5. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure: Kalman et al, US (6,865,149); Ellis et al, US (6,888,791);

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Kovvalis et al, US (6,920,113); Cottreau et al, US (6,952,396); Lee, US (6,959,000).

6. Any inquiry concerning this communication or earlier communications from the examiner should be directed to AHMED ELALLAM whose telephone number is (571) 272-3097. The examiner can normally be reached on 9-5:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Chieh Fan can be reached on (571) 272-3042. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

AHMED ELALLAM  
Examiner  
Art Unit 2668  
Monday, December 12, 2005

A handwritten signature in black ink, appearing to read 'H. Nguyen', with a long horizontal flourish extending to the right.

**HANH NGUYEN**  
**PRIMARY EXAMINER**